

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number  
**WO 2005/061385 A2**

(51) International Patent Classification<sup>7</sup>: C01F 7/30

(21) International Application Number:  
PCT/EP2004/013564

(22) International Filing Date:  
30 November 2004 (30.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
103 60 087.6 20 December 2003 (20.12.2003) DE

(71) Applicant (for all designated States except US): **DE-GUSSA AG** [DE/DE]; Bennigsenplatz 1, 40474 Düsseldorf (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCHUMACHER, Kai** [DE/DE]; Berliner Strasse 16, 65719 Hofheim (DE). **GOLCHERT, Rainer** [DE/DE]; Gabriele-von-Fechenbach-Strasse 16b, 64807 Dieburg (DE). **SCHILLING, Roland** [DE/DE]; Jakobstrasse 4, 63579 Freigericht (DE). **BATZ-SOHN, Christoph** [DE/DE]; Riedstrasse 10a, 63454 Hanau-Mittelbuchen (DE). **MÖRTERS, Martin** [DE/DE]; Dinkelbergstrasse 6, 79618 Rheinfelden (B) (DE).

(74) Common Representative: **DEGUSSA AG**; Intellectual Property Management, Patente und Marken, Standort Hanau, Postfach 13 45, 63403 Hanau (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ALUMINIUM OXIDE POWDER PRODUCED BY FLAME HYDROLYSIS AND HAVING A LARGE SURFACE AREA

(57) Abstract: Aluminium oxide powder produced by flame hydrolysis and consisting of aggregates of primary particles, having a BET surface area of from 100 to 250 m<sup>2</sup>/g, a dibutyl phthalate absorption of from 50 to 450 g/100 g of aluminium oxide powder, which powder shows only crystalline primary particles in high-resolution TEM pictures. It is prepared by vaporising aluminium chloride, transferring the vapour by means of a carrier gas to a mixing chamber and, separately therefrom, supplying hydrogen, air (primary air), which may optionally be enriched with oxygen and/or may optionally be pre-heated, to the mixing chamber, then igniting the mixture of aluminium chloride vapour, hydrogen, air in a burner and burning the flame into a reaction chamber that is separated from the surrounding air, subsequently separating the solid material from the gaseous substances and then treating the solid material with steam and optionally with air, the discharge rate of the reaction mixture from the mixing chamber into the reaction chamber being at least 10 m/s, and the lambda value being from 1 to 10 and the gamma value being from 1 to 15. It can be used as an ink-absorbing substance in ink-jet media.



WO 2005/061385 A2